	Application No.	Applicant(s)
Notice of Allowability	10/671,414	LIU, JINLEI
	Examiner	Art Unit	
	Xiuqin Sun	2863	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to *06/10/2005*.

2. ☒ The allowed claim(s) is/are *1-5*.

3. ☒ The drawings filed on *25 September 2003* are accepted by the Examiner.

4. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a) ☐ All   b) ☐ Some*   c) ☐ None of the:

        1. ☐ Certified copies of the priority documents have been received.

        2. ☐ Certified copies of the priority documents have been received in Application No. _____ .

        3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

    * Certified copies not received: _____ .

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

5. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.

6. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.

    (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached

        1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____ .

    (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of

        Paper No./Mail Date _____ .

Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).

7. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☒ Notice of References Cited (PTO-892)

2. ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)

3. ☐ Information Disclosure Statements (PTO-1449 or PTO/SB/08), Paper No./Mail Date _____

4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material

5. ☐ Notice of Informal Patent Application (PTO-152)

6. ☐ Interview Summary (PTO-413), Paper No./Mail Date _____ .

7. ☒ Examiner's Amendment/Comment

8. ☒ Examiner's Statement of Reasons for Allowance

9. ☐ Other _____ .

DETAILED ACTION

EXAMINER'S AMENDMENT

1.   An examiner's amendment to the record appears below. Should the changes

and/or additions be unacceptable to applicant, an amendment may be filed as provided

by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be

submitted no later than the payment of the issue fee.

This examiner's amendment corrects minor objections to the Abstract, since it

should be in narrative form and generally limited to a single paragraph on a separate

sheet within the range of 50 to 150 words.

2.   The application has been amended as follows:

Replace the abstract with the following:

-- R.F spectrum and FM characteristics of an SSC clock signal are measured

with a high speed single-bit test channel that can be present in the Agilent 93000 SOC

System. [[Such a channel can be configured to measure, at up to 2.5 Gbps, the logical

value of an input signal applied thereto.]] The SSC clock of interest is applied to one of

the high-speed single-bit test channels. A conventional FFT [[(Fast FourierTransform)]]

is performed on the captured data to discover the aggregate nature of the distributed

spectral components, which can then be compared with associated specifications. The

captured data is applied to another algorithm to find the FM modulation profile. That

algorithm involves operating on captured digital data to perform a frequency translation

operation [[(equivalent to heterodyning),]] a first filtering operation, a discrete

differentiation operation that includes raw phase extraction, followed by a second

filtering operation. The algorithm for finding the SSC modulation profile does not require

the high-speed digital channel to meet Nyquist sampiing requiremenl. --

Allowable Subject Matter

3.   Claims 1-5 are allowed.

Reasons for Allowance

4.   The following is an examiner's statement of reasons for allowance:

The primary reason for the allowance of claims 1-3 is the claimed method steps

of: computationally heterodyning the signal represented by the first sequence of logical

values stored in step (b) by construing those logical values as corresponding numeric

ones and zeros and producing a second sequence of numeric values that represents a

spectrum including upper and lower sidebands, the lower sideband approaching but not

passing through a frequency of zero; digitally filtering the second sequence of numeric

values to remove the upper sideband and produce a third sequence of numerical values

including consecutive time variant original sine values of the lower sideband;

differentiating the consecutive time variant original sine values of the third sequence to

form a fourth sequence of derived cosine values whose successive members are the

differences between each original sine value of the third sequence and its successor

original sine value in the third sequence; assuming the existence of an all-zero fifth

sequence of original cosine values corresponding to the original sine values of the third

sequence, and also the existence of an all-zero sixth sequence of derived sine values

corresponding to the fourth sequence of derived

cosine values; computationally extracting phase information from the third, fourth, fifth

and sixth sequences to produce a seventh sequence of numerical values representing

change in phase as a function of time; digitally filtering the seventh sequence to

produce an eighth sequence of numerical values representing change in frequency as a

function of time; and inspecting the numerical values in the eighth sequence to

ascertain the minimum and maximum frequencies. It is these limitations found in each

of the claims, as they are claimed in the combination that have not been found, taught

or suggested by the prior art of record, which make these claims allowable over the

prior art.

The primary reason for the allowance of claims 4 and 5 is the claimed method

steps of: computationally heterodyning the signal represented by the first sequence of

logical values stored in step (b) by construing those logical values as corresponding

ones and zeros and producing a second sequence of numeric values that represents a

spectrum including upper and lower sidebands, the lower sideband approaching but not

passing through a frequency of zero; digitally filtering the second sequence of logical

values to remove the upper sideband and produce a third sequence of numerical values

of consecutive time variant original sine values and a fifth sequence of numerical values

of consecutive time variant original cosine values, each for the lower sideband;

differentiating the consecutive time variant original sine values of the third sequence to

form a fourth sequence of derived cosine values whose successive members are the differences between each original sine value of the third sequence and its successor original sine value in the third sequence; differentiating the consecutive time variant original sine values of the fifth sequence to form a sixth sequence of derived sine values whose successive members are the differences between each original cosine value of the fifth sequence and its successor original cosine value in the fifth sequence; computationally extracting phase information from the third, fourth, fifth and sixth sequences to produce a seventh sequence of numerical values representing change in phase as a function of time; digitally filtering the seventh sequence to produce an eighth sequence of numerical values representing change in frequency as a function of time; and inspecting the numerical values in the eighth sequence to ascertain the minimum and maximum frequencies. It is these limitations found in each of the claims, as they are claimed in the combination that have not been found, taught or suggested by the prior art of record, which make these claims allowable over the prior art.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Prior Art Citations

5.   The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

1) Lee, Kyeongho et al. (U.S. Pub. No. 20030169086 A1) is entitled "Zero-delay buffer circuit for a spread spectrum clock system and method therefore".

2) Powell et al. (U.S. Pat. No. 6496547 B1) is entitled "Digital FM receiver employing combined sample-and-hold and integrate-and-dump detectors for improved bit error rates".

3) Blades (U.S. Pat. No. 5729145) is entitled "Method and apparatus for detecting arcing in AC power systems by monitoring high frequency noise".

4) Salembier et al. (U. S. Pat. No. 4879729) is entitled "Apparatus for the decoding coded frequency modulated signals".

5) Filiol et al. (U. S. Pat. No. 651553 B1) is entitled "Delta-sigma based dual-port modulation scheme and calibration techniques for similar modulation schemes".

6) Okubo et al. (U. S. Pub. No. 20020176486 A1) is entitled "Spread spectrum transmission apparatus, spread spectrum reception apparatus, and spread spectrum communication system".

7) Eade et al. (U. S. Pat. No. 6597226 B1) is entitled "Application specific integrated circuit architecture utilizing spread spectrum clock generator module for reducing EMI Emissions".

8) Haartsen et al. (U. S. Pat. No. 6563892 B1) is entitled " Method and systerm for detection of binary information in the presence of slowly varying disturbances".
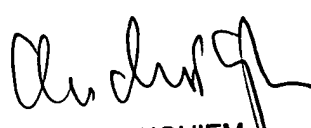
Contact Information

6.   Any inquiry concerning this communication or earlier communications from the examiner should be directed to Xiuqin Sun whose telephone number is (571)272-2280. The examiner can normally be reached on 6:30am-4:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John Barlow can be reached on (571)272-2269. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Xiuqin Sun
Examiner
Art Unit 2863

XS
June 27, 2005

MICHAEL NGHIEM
PRIMARY EXAMINER